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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,870	06/08/2001	George M. Zimmer	260006.442	2647
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SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVE SUITE 6300 SEATTLE, WA 98104-7092				
			EXAMINER PAIK, SANG YEOP	
			ART UNIT 3742	PAPER NUMBER

DATE MAILED: 02/02/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/878,870

Applicant(s)

ZIMMER ET AL.

Examiner

Sang Y Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21, 35-38 and 64-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 74 is/are allowed.
- 6) ☒ Claim(s) 1-21, 35-56 and 64-73 is/are rejected.
- 7) ☒ Claim(s) 57 and 58 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 50-53, 72 and 73 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 50, 53, 72 and 73, the claimed second valve having its respective "a valve body", "an expansion chamber", "a liquefied gas inlet chamber", "a liquefied gas outlet chamber" and "a valve" needs to be clearly distinguishable over the first valve having its respective "a valve body", "an expansion chamber", "a liquefied gas inlet chamber", "a liquefied gas outlet chamber". It is suggested that the respective second valve components be amended with a preceding term -- second -- to distinguish its components from the first valve components. Appropriate corrections are required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 16-19, 21, 41-45, 47-49, 64-66, 68 and 71 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al (US 5,005,370).

Tanaka et al shows a vaporizer including a heat exchanger/evaporator (first means) for producing superheated liquefied gas, a capacity control valve having a thermal expansion chamber with a liquefied gas inlet chamber, a liquefied gas outlet chamber, a pressure sensor such as a diaphragm (third means) for sensing the differential pressure change in the thermal expansion chamber and the liquefied gas inlet chamber, a temperature sensor (second means) with the expansion fluid therein to measure the temperature pressure of the released superheated gas from the heat exchanger, a valve inlet, a valve outlet, a movable valve/flow regulator (fourth means) positioned between the liquefied gas inlet chamber and liquefied gas outlet chamber, an auxiliary pressure device (fifth means) such as a coil spring to bias the valve.

5. Claims 16-19, 21, 41-45, 47-49, 64-66, 68 and 71 are rejected under 35 U.S.C. 102(e) as being anticipated by Milner (US 6,584,998).

Milner shows a vaporizer including a heat exchanger/vaporizer (first means) for producing vaporized liquefied gas, a capacity control valve having a thermal expansion chamber with a liquefied gas inlet chamber, a liquefied gas outlet chamber, a pressure sensor such as a

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diaphragm (third means) for sensing the differential pressure change in the thermal expansion chamber and the liquefied gas inlet chamber, a temperature sensor (second means) with the expansion fluid therein to measure the temperature pressure of the released superheated gas from the heat exchanger, a valve inlet, a valve outlet, a spring (fifth means) biased movable valve/flow regulator (fourth means) positioned between the liquefied gas inlet chamber and liquefied gas outlet chamber. Also see column 4, lines 25-27 and column 5, lines 40-57.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5, 7-13, 15, 35-38, 40, 54-56, 69 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (US 5,005,370) or Milner (US 6,584,998) in view of Jurcik et al (US 6,076,359) or Fortney (US 3,250,723).

Tanaka et al or Milner discloses all the structure and method claimed except the heat exchanger/evaporator explicitly showing a heater.

Jurcik et al shows a heat exchanger having a heater such as resistance heaters as well as self regulating heaters (known in the art as PCT or NCT heating elements) having a mass of thermally conductive material embedded therein with a gas piping and fittings. Jurcik et al further shows that strip heaters can be attached to the heating block. Forney also shows a heat exchanger/evaporator with a heater having a thermally conductive material embedded with a tube in the heat exchanger.

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In view of Jurcik et al or Fortney, it would have been obvious to one of ordinary skill in the art to adapt Tanaka et al or Milner with the heat exchanger/evaporator with a heater including PCT heating elements as well as other forms of heating elements to generate the necessary heat to vaporize or superheat the liquefied source material into gases.

With respect to claim 3, Tanaka et shows the temperature sensor being a temperature sensing bulb.

With respect to claims 4, 12, 69 and 70, it would have been obvious to one of ordinary skill in the art to use an expansion fluid having similar saturation properties of the liquefied gas or any other type of fluids since the choice of such fluids would have been dependent upon its expansion characteristics that meet the user's desired expansion of such fluid.

With respect to claim 35, while Tanaka or Milner shows a single vaporizer, it would have obvious to one of ordinary skill in the art to use one or a plural vaporizers which depends on how much one wishes to produce such vaporization within the given time and applications. If one were to produce a large quantity of such vaporization within a given time, one would be motivated to prepare multiple vaporizers to meet such demand.

8. Claims 6, 14, 20, 39, 46, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al or Milner in view of Jurcik et al or Fortney as applied claims 1-5, 7-13, 15, 35-38, 40, 54-56, 69 and 70 and over Tanaka et al or Milner as applied to claims 16-19, 21, 41-45, 47-49, 64-66, 68 and 71 above, and further in view of Barbulesco (US 2,856,759) or Nielsen (US 4,032,070).

Tanaka et al or Milner in view of Jurcik et al or Fortney discloses the structure and method claimed except an adjustment member to adjustably select the biasing pressure.

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Barbulesco or Nielsen shows an adjustment member that can adjustably select the biasing pressure. In view of Barbulesco or Nielsen, it would have been obvious to one of ordinary skill in the art to adapt Tanaka et al or Milner, as modified by Jurcik et al or Fortney, with an adjustment member to adjust the coil spring member to meet the desired flow rate of the vaporization of the gas fluid.

Allowable Subject Matter

9. Claims 50-53 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. Claims 57 and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 72 and 73 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action. Since claims 72 and 73 incorporated the allowable subject matter of claims 50 and 53, respectively, the applicant is advised to make appropriate corrections if and when the application becomes in condition for allowance.

12. Claim 74 is allowed over the prior art of record. Since claim 74 incorporated the allowable subject matter of claim 57, the applicant is advised to make appropriate corrections if and when the application becomes in condition for allowance.

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Response to Arguments

13. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 703-308-1147. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.



Sang Y Paik
Primary Examiner
Art Unit 3742

syp